



**NATIONAL SCIENCE FOUNDATION  
4201 WILSON BOULEVARD  
ARLINGTON, VIRGINIA 22230**

**Title: Revisionary Syntheses in Systematics (DEB/BIO)**

Dear Colleague,

Two of our core programs within the Division of Environmental Biology -- Systematic Biology (SysBio; see the program description on the NSF website at [www.nsf.gov/bio/deb/debsysbio.htm](http://www.nsf.gov/bio/deb/debsysbio.htm)) and Biodiversity Surveys and Inventories (BS&I; see the new program announcement, NSF 02-186, at [www.nsf.gov/pubs/2002/nsf02186/nsf02186.htm](http://www.nsf.gov/pubs/2002/nsf02186/nsf02186.htm)) - encourage the submission of proposals aimed at synthesizing available and new species-level information in the context of providing revisionary treatments and predictive classifications of particular groups of organisms.

Such revisionary syntheses in systematics (REVSYS) are the fundamental building blocks of our knowledge of planetary biodiversity. These syntheses accomplish many ends simultaneously:

1. they bring together all the specimens available, in the world's natural history collections, of a particular group of organisms, so that
2. investigators can compare the attributes of all those specimens, and the distribution of those attributes in space and time, to enable
3. populations of different species to be distinguished from each other, and
4. questions about how those species are related to each other (i.e., what natural groups of species exist) to be addressed, so that
5. highly predictive classifications can be established, which allow us to generalize from those few attributes that have been studied to the far larger universe of attributes that remain to be investigated.

Titles of proposals emphasizing such Revisionary Syntheses in Systematics should be prefaced with "REVSYS:", and those proposals can be submitted to either the BS&I or SysBio programs.

Our goals are to help revitalize revisionary systematics, so that it fully utilizes modern information technology at all stages, from data capture (e.g., digital imaging, geo-referencing, etc.) and analysis (e.g., sequence alignments, phylogeny reconstructions, GIS, image analysis, etc.) through to electronic presentation and dissemination of the results. Interactive keys and automated recognition systems have enormous potential for enabling accurate identifications of organisms by non-specialists, but only for those groups that have been thoroughly revised by knowledgeable specialists.

The success of the cladistic revolution in making tree-thinking vital to all aspects of comparative biology has enabled an impressive flowering of studies that use phylogenetic analysis to explore the evolution of a plethora of phenomena. Surprisingly, though, the expansion in the numbers of such studies has not been accompanied by a parallel growth in revisionary systematics. The innovative and highly successful PEET (Partnerships for Enhancing Expertise in Taxonomy)

program has had a very positive impact, especially in helping to train a new generation of revisionary systematists. Please note that the 5th PEET special competition has a March 1, 2003 deadline; see the program announcement, NSF 00-140, on the NSF website at [www.nsf.gov/pubs/2000/nsf00140/nsf00140.htm](http://www.nsf.gov/pubs/2000/nsf00140/nsf00140.htm). However, PEET cannot support all the needed revisionary syntheses. We wish to remind the systematic biology community that our core programs support such syntheses.

REVSYS proposals that seek to develop and deploy modern technological advances in data capture, analysis, and dissemination are encouraged. Projects that incorporate graduate and/or undergraduate students as full partners in the research, conceptually and operationally, and that increase participation of members of groups underrepresented in science are especially encouraged.

The target date for submissions to either BS&I or SysBio is January 10, 2003. **Depending on the availability of funds, we anticipate investing up to \$2.5 million in FY2003 in proposals meeting the above criteria.** NSF FastLane requirements ([www.fastlane.nsf.gov](http://www.fastlane.nsf.gov)) apply to all proposals submitted to these programs. Proposals must conform to all format requirements in the Grant Proposal Guide (<http://www.nsf.gov/pubs/2003/nsf032/start.htm>).

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## PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

Investigators with questions about the REVSYS goals are encouraged to contact one of the following program officers:

for BS&I, Norman Platnick ([nplatnic@nsf.gov](mailto:nplatnic@nsf.gov), 703-292-7121)

for SysBio, Diana Lipscomb ([dlipscom@nsf.gov](mailto:dlipscom@nsf.gov), 703-292-7909)

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